

MALVA DENDROMORPHA/MALVA AUSTRALIANA HYBRID

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The introduced tree mallow *Malva dendromorpha* (formerly *Lavatera arborea*) appears to be replacing the native *Malva australiana* (formerly *Lavatera plebeia* var *tomentosa*) on the small seabird islands off Perth. This problem has also been encountered on Mud Island, Victoria, and West Island, South Australia (J. Yugovic pers. comm., J. Choate, pers. comm.). It has been reported that the two species occasionally produce a hybrid which appears to be sterile (Keighery, 1994; Hussey, 1997; J. Yugovic pers. comm.), but the hybrid does not

appear to have been described in the literature.

In October 1997 a floral survey of Bird Island, Shoalwater Bay, revealed dense clumps of *M. dendromorpha* and only one specimen of *Malva australiana*. No *M. australiana* has grown on the island since this time, but in 1998/99 one plant growing on a cliffside appeared to be a hybrid of *M. australiana* and *M. dendromorpha*. The following table and illustrations give comparisons between the supposed hybrid and the two parent species:

<i>M australiana</i>	Hybrid	<i>M. dendromorpha</i>
Flowers white, no markings	Flowers pink, paler markings	Flowers purple with dark purple veins
Calyx lobes longer than bracteoles	Calyx lobes as long as bracteoles	Calyx lobes shorter than bracteoles
Upper leaf surface more hairy	Upper leaf surface less hairy	Upper leaf surface less hairy
Calyx lobes cover developing fruit	Calyx lobes cover developing fruit	Calyx lobes do not cover developing fruit
Fruit contains 11 -12 mericarps	Fruit contains 10 - 11 mericarps	Fruit contains 6 - 7 mericarps
Plants up to 1 m tall on these islands	1.6 m tall	Plants about 2 m tall on these islands
Hairy stem	Hairy stem	Fairly glabrous stem

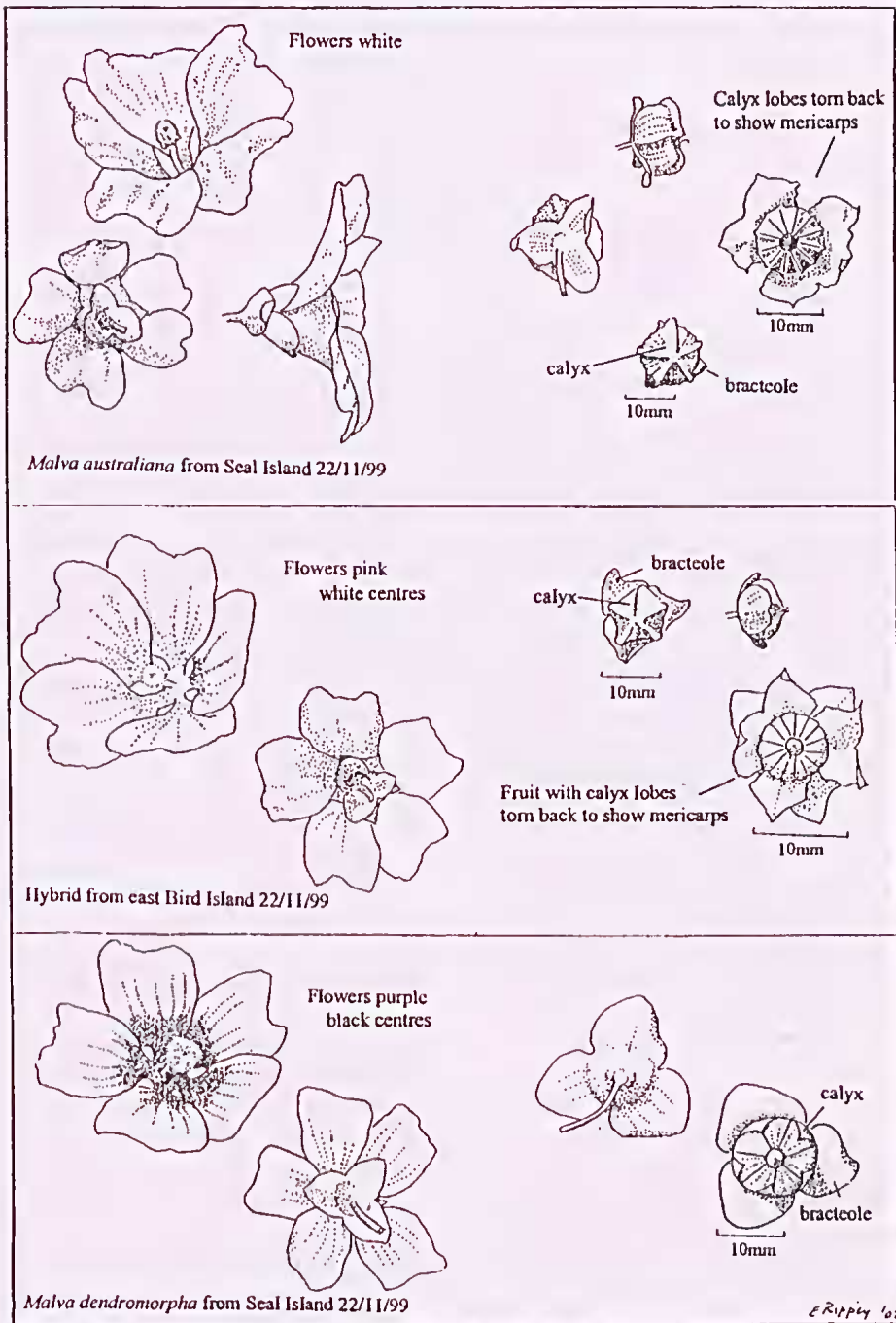


Figure 1. Comparison of flowers and fruit of *Malva dendromorpha* and *M. australiana* and hybrid.

The seeds of the hybrid did not mature, but remained wet and adherent and poorly developed and the whole fruits were dropping off the plant before the seeds matured.

An experiment was carried out to compare germination of the three. 100 seeds each of *M. dendromorpha* and *M. australiana* and 50 seeds of the hybrid were placed on filter paper over vermiculite in 150 mm diameter plastic petri dishes (25 seeds per dish), and wet with deionised water. The dishes were placed in a growth cabinet at 20°C. One week later all hybrid seeds were mucilaginous and mouldy, and had to be discarded. 22% of the *M. dendromorpha* and 15% of the *M. australiana* germinated over the next six months.

Material from the hybrid, from *M. dendromorpha* growing adjacent to it, and from *M. australiana* from nearby Middle Shag Island (the last *M. australiana* growing on Bird Island died the season prior to the appearance of the hybrid) were sent for DNA analysis to two laboratories, but were unproductive (Dr Z. Krauss, pers. comm., Professor J. Conran, pers. comm.).

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